AMENDMENTS TO THE CLAIMS

The following is a listing of all claims that are, or ever were, in the instant application. This listing is intended to replace all prior versions, and listings, of claims in the application.

Listing of claims:

1 (currently amended). A mirror comprising a reflective surface bonded to a substrate, the reflective surface comprising silicon metal, the substrate comprising a composite body comprising (i) a matrix component comprising silicon metal, (ii) a reinforcement material comprising a plurality of carbon fibers distributed throughout said matrix component, and (iii) at least one non-graphitic carbon coating disposed between said carbon fibers and said matrix.

2 (original). The mirror of claim 1, wherein said reflective surface comprises elemental silicon.

3 (original). The mirror of claim 2, wherein said reflective surface consists essentially of said silicon.

4 (original). The mirror of claim 1, wherein said reflective surface is substantially amorphous.

5 (original). The mirror of claim 1, wherein said reflective surface is applied to said mirror substrate by a vapor deposition process.

6 (original). The mirror of claim 5, wherein said vapor deposition process comprises at least one process selected from the group consisting of chemical vapor deposition and electron beam physical vapor deposition.

7 (previously presented). The mirror of claim 1, wherein said composite body is made by infiltrating a molten infiltrant comprising said silicon metal into a porous mass comprising said coating and carbon fibers.

8 (previously presented). The mirror of claim 1, wherein said composite body comprises reaction bonded silicon carbide.

9 (previously presented). The mirror of claim 1, wherein said matrix component further comprises beta silicon carbide.

10 (original). The mirror of claim 1, wherein said carbon fibers are woven.

11 (original). The mirror of claim 10, wherein said carbon fibers are woven into a two-dimensional ply.

12 (original). The mirror of claim 1, wherein said carbon fibers are unidirectional.

13 (original). The mirror of claim 1, wherein said carbon fibers are provided in the form of a prepreg.

14 (original). The mirror of claim 10, wherein a plurality of plies are laminated to a desired orientation and thickness.

15 (original). The mirror of claim 1, wherein said carbon fibers have an overall or average CTE in the axial direction that is less than about 2.7 ppm/K.

16 (original). The mirror of claim 1, wherein said carbon fibers have an overall or average CTE in the axial direction that is a negative value.

17 (original). The mirror of claim 1, wherein said mirror substrate comprises a plurality of ribs on a back surface.

18 (previously presented). A mirror comprising a reflective surface bonded to a substrate, the reflective surface comprising amorphous silicon metal, the substrate comprising a composite body comprising (i) a matrix component comprising silicon metal, (ii) a reinforcement material comprising a plurality of carbon fibers distributed throughout said matrix component, and (iii) at least one coating disposed between said carbon fibers and said matrix.

19 (original). The mirror of claim 18, wherein said reinforcement material further comprises silicon carbide.

20 (original). The mirror of claim 18, wherein said coating comprises at least one chemical protective coating material.

21 (original). The mirror of claim 18, wherein said coating comprises at least one material selected from the group consisting of carbon, boron nitride and silicon carbide.

22 (original). The mirror of claim 18, wherein said composite body comprises siliconized silicon carbide.

23 (canceled).

24 (new). A mirror comprising a reflective surface bonded to a substrate, the reflective surface comprising silicon metal, the substrate comprising a composite body comprising (i) a matrix component comprising silicon metal, (ii) a reinforcement material comprising a plurality of carbon fibers distributed throughout said matrix component, and (iii) at least one coating disposed between said carbon fibers and said matrix, and further wherein said substrate has a CTE between about negative 0.46 and positive 1.75 ppm/K.